

NCDOT

Major Changes and Revisions

for the

Standard Specifications

for

Roads and Structures

2006

February 10, 2006

Section/Article

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General comments

Metric measurements were removed.

Measurement and Payment were combined into one section

Some renumbering in subsections for consistency throughout the Book

DIVISION 1 GENERAL REQUIREMENTS

Electronic Bidding requirements were added from Project Special Provisions to appropriate sections.

101-2 Added abbreviations incorporated from other Divisions

101-3 - 101-97 were renumbered.

102-2 Prequalification was rewritten

106-1 (B) Added Domestic Steel requirements from Project Special Provision.

107-13 (A) Requirements for groundcover changed from 30 days to 21 days.

107-13 (D) Water and Air Pollution was rewritten

107-22 Requirement to wear safety vest

107-27 Fines levied against the Department; new section

109-3 Force Account revised from Project Special Provision

109-4 Partial Payments incorporated from Project Special Provision

109-8 Fuel Adjustments revised to change adjustment to 0%; incorporated from Project Special Provision

DIVISION 2 EARTHWORK

200-1 Removed statement that excluded clearing and grubbing at structure sites.

200-7 Removed paragraph concerning clearing and grubbing of borrow sources furnished by the Department.

Deleted pay item Clearing and Grubbing of Borrow and Material Sources.

205-2 Added statement that well abandonment must be performed by a Certified Well Contractor.

210-5 Added statement that Engineer may have asbestos removal performed by others when the asbestos is discovered after the opening of bids.

215-5 Added statement that Engineer may have asbestos removal performed by others when the asbestos is discovered after the opening of bids.

225-2 Incorporated project special provision entitled Roadway Excavation.

228 Deleted Entire Section 228 Pre-Splitting of Rock. Will be revised and included as project special provision when needed.

230-4 (B) Deleted Department Furnished Sources. Will be a project special provision when needed.

230-4 Contractor Furnished Sources-Added statement concerning borrow and waste site reclamation procedures being available on the web.

Incorporated Special Provision entitled *Contractor Borrow Source*.

270-3 Added new language concerning operating heavy equipment on the fabric; also revised language concerning joints in the fabric.

DIVISION 3 PIPE CULVERTS

- 300-5** Removed first sentence concerning invert elevations.
300-6 (B) Added paragraph concerning rod and lug coupling bands.
320-3 (B) Change to require Contractor to determine amount of camber in a line of pipe.
330 Welded Steel Pipe- Section completely re-written to provide for installations in soil and not in soil. Adjusted pay items accordingly.

DIVISION 4 MAJOR STRUCTURES

- 410-3** Moved Clearing and Grubbing references to Section 200.
Removed references to shoring. Information included in shoring
410-5 Deleted Cofferdams; made Project Special Provision, section renumbered.
420-3 Following changes:
 - Added language to describe requirements for SIP forms with excluder plates or styrofoam void fillers
 - Added language to describe embedded clips for SIPs used with prestressed concrete girdersIncorporated Project Special Provision – Falsework and forms over or adjacent to traffic
420-8 Removed Article for Foundation Seals; renumbered Section
420-10 Deleted use of hot poured rubber asphalt for expansion joints
420-13 Incorporated Project Special Provision – Adhesively anchored anchor bolts or dowels
420-16 Added language to clarify form removal requirements for box culvert walls
420-20 Added language to clarify requirements for placing traffic on bridge decks as it relates to slip forming concrete barrier rail
425-5 Incorporated previous Project Special Provision –Mechanical Butt Splices
430-6 Added requirements for Box Beams
442-7 Revised language to allow shop painting of all coats for System 1.
442-11 Added SSPC QP1 certification requirement
442-13 Changed SSPC Guide Spec to 6; added SSPC QP2 certification requirement
445 Deleted entire section for timber structures
450 Section totally reworded with the following changes:
Deleted preaugering through embankments except where necessary for driving concrete piles:
 - Revised language to only require embankment construction to bottom of cap (in lieu of subgrade elevation) unless noted otherwise on the plans
 - Deleted references to determination of pile length by the Engineer
 - Deleted references to test piles
 - Deleted references to drop hammers
 - Restricted submittal for pile driving methods and equipment to 2 hammers per pile type per submittal. Reduced review time to 20 working days.

- Specified acceptable range of blows per foot at the required bearing capacity. Required variable energy hammer for concrete piles.
 - Addressed installation of piles with vibratory hammers.
 - Addressed inspection and replacement of the hammer cushion.
 - Defined allowable driving stresses and conditions upon which driving piles may be stopped.
 - Addressed galvanizing steel piles. Added pay item for galvanized steel piles.
 - Clarified use of the wave equation.
 - Defined practical refusal.
 - Clarified the option to drive pile to grade in lieu of cutting off the pile.
- 452** Section totally reworded with the following changes:
- Clarified section to apply to only permanent sheet pile retaining walls.
 - Addressed installation of sheet piles with vibratory hammers.
 - Addressed inspection and replacement of the hammer cushion.
 - Defined allowable driving stresses and conditions upon which driving piles may be stopped.
 - Addressed pile cushions for concrete sheet piles.
 - Deleted timber sheet piles.
 - Added concrete coping and backfilling behind wall.
 - Revised pay item to pay for exposed face area only per square foot with single pay item, Sheet Pile Retaining Walls.
- 453** (Formerly Section 842):
- Addressed foundation material, weep holes, surface finish, joints, removal of forms, brick veneer, drains and backfilling for gravity retaining walls.
 - Revised pay item to pay for exposed face area only per square foot with single pay item, Gravity Retaining Walls.
- 454** Deleted references to cut back asphalt and asphalt plank
Reduced number of methods for waterproofing and dampproofing to one each
- 460** Included Barrier Rail Delineators in description and payment for such incidental to barrier rail
- 462** Deleted references to concrete block slope protection and stone slope protection

DIVISION 5 SUBGRADE, BASES AND SHOULDERS

- 501-8 (A)** In the second sentence of the first paragraph, the 40 days was changed to 24 calendar days to accommodate contractor's requests. The same results can be accomplished in the shorter time period.
- 501-15** Asphalt curing seal and blotting was separated into their own subarticles for aesthetics.
- 520-3** Deleted Subarticles 520-3(A) and (B) and reworded article 520-3 for clarity. (Redundant)
- 520-5** Changed references directly to Division 10 instead of routing through different articles.
- 520-6** Referenced Article 1010-1 and 1010-2. The majority of this article was deleted because it was redundant.

Section/Article

520-11	The Table reference was changed to Section 1010 and reworded for clarity.
530-4(C)	Referenced Subarticle 230-4(C) and deleted redundancy.
540-3	Revised the seasonal limitations to be covered by December 1 of the same year. Revised the Articles reference associated with other items of work due to Method of Measurement and Basis of Payment being combined.
540-5	Revised the reference for Table 540-2 to Table 1010-4.
540-10	Changed first paragraph to the active voice. Referenced Article 1010-4. The majority of this article was deleted because it was redundant.
540-14	Two line items related to road mixed CTBC were deleted because they are obsolete.
542-3	Revised the Articles reference associated with other items of work due to Method of Measurement and Basis of Payment being combined.
542-7	In the second sentence of the first paragraph, the 40 days was changed to 24 calendar days to accommodate contractor's requests. The same results can be accomplished in the shorter time period.
542-8	In the first sentence of the second paragraph, the allowable moisture content was changed from +/- 2% from optimum to between Optimum and +2%. This is in an effort to provide enough moisture in the soil to have the cement hydrate.
542-17	This Article was combined with Article 540-16 for consistency throughout the <i>Specifications Book</i> .

DIVISION 6 ASPHALT PAVEMENTS

600-2	Contract documents was substituted for Special Provisions as an editorial change.
600-5	The last paragraph of this section was moved to the first paragraph of Article 600-9 Measurement and Payment.
605-8	A new paragraph was added to address the tracking and accumulation of tack coat material on existing and newly constructed pavements.
607-1	Contract documents was substituted for plans and special provisions as an editorial change.
607-2	Minor editorial changes that do not affect the intent of the Specifications. Equip milling machines with an electronic control system to control the longitudinal profile. Allowed the use of a 24-foot non-contacting mobile string system.
607-3	Minor editorial changers that do not affect the intent of the Specifications. Removed specific equipment used to clean the pavement to be more end result oriented.
607-4	This Article was rewritten to clarify that the millings are not to be considered a commodity. The Department reserves the right to delete any portion of the work without paying an increase in unit cost for asphalt.
609-4	Changed wording to allow the mix to be verified on either NCDOT production or private production.
609-5	Clarify the issue of what material is to be paid for when.
609-5(C)(1)	Process control samples defined as quality control samples taken at times other than the scheduled or directed sample tonnage. Process control samples should not be plotted on the control charts or reported to the QA laboratory.

Section/Article

- 609-5(C)(2)** The full and partial test series letters was changed for editorial purposes. ASTM D 2041 was taken out of the Maximum Specific Gravity test. Moved recycled shingle material just below recycled pavement material for aesthetics.
- 609-6(C)(2)F** Deleted the requirement for N_{\max} based on Dr. Brown's of NCAT comments. The uncompacted void content for natural sands was also eliminated. The APA provision coupled with N_{ini} will allow the industry to use more natural sands in their mixes without fear rutting will be an issue.
- 609-5(C)(3)** This Subarticle better defined what test results should be plotted on the control charts.
- 609-5(C)(6)** Allowed the contractor's Level II Superpave technician to resume normal production after a required or elected stoppage provided they notified the appropriate QA Supervisor and submitted the results from the mix verification tests.
- 609-5(D)(1)** The types of pavement required to be tested for density control was broken into separate numbers for clarity.
- 609-5(D)(2)** Immediately was more clearly defined as within one working day of the sample being taken for filling core sample holes. Tack should be properly applied to the holes before the mix is compacted.
- 609-5(E)** Observations was changed to activities for clarity. Process Control test results are the for the Contractor's informational purposes only.
- 609-6** The option of having the QA Laboratory jointly perform the verification TSRs was removed. Contractors must provide the results to the QA lab within 7 calendar days.
- 610-2** The material section referenced for Anti-strip additive (chemical) was updated to Article 1020-8
- 610-3(A)** Submit a mix design using a Department certified mix design technician. AASHTO PP28 was updated to AASHTO R 35. The gyratory printouts for specimens compacted to N_{\max} was deleted as a requirement for the design process. Type S 9.5D was added as a Standard Mix Type.
- 610-3(A)(4)** The current bulk and apparent specific gravity should be used for the aggregate properties. The uncompacted void content of natural sand for Type C and D mixes is no longer required, however, APA samples will be required to determine rut potential.
- 610-3(A)(7)** The Brand Name was substituted for Name of Product.
- 610-3(A)(9)** AASHTO PP2 test procedure was renamed R30, and AASHTO PP28 was renamed R35
- 610-3(A)(11)** The restricted zone requirements were dropped for the 0.45 power chart.
- 610-3(A)(13)** The contractor will have to submit the TSR test data for Mix designs prior to approval. In addition to the required mix design submittal forms, 6 compactor specimens are required to be delivered to M&T's central lab for APA testing for rut susceptibility. Submit materials to the M&T asphalt design laboratory representative samples of each mix component. These samples should be submitted to the design lab 20 days prior to the anticipated beginning. (This change allows M&T more time to compile the materials and perform a verification test.)

- 610-3(B)** Surface mix designs will be tested for rutting susceptibility. The approval criterion is listed in Table 610-2. Mix designs that fail to meet these requirements will be considered unacceptable and must be redesigned such that rut depths are acceptable.
- 610-3(C)** The mixing temperatures will be established for mixes listed in Table 610-2 between 265 and 350.
Table 610-2 was modified to include max rut depth criteria for surface mixes, and eliminated the N_{\max} criteria.
- 610-7** Removed the requirement that the truck beds must be made of metal. Truck beds must be sprayed with an approved release agent material.
- 610-8** The material transfer device will be used on any and all mixes which have a binder of PG 76-22. The equipment and laydown requirements are discussed within.
- 610-10** The last paragraph in this article was removed because it was repetitive. The first paragraph in 609-5(D)(1) already contained this direction.
- 610-13** Simultaneously was taken out of the exception for the determination of lots for density
- 620-2** The last two paragraphs of this article were moved to Article 620-3.
- 620-4** Adjustments to the unit price for asphalt binder will be based on the actual terminal price. No longer will the cost of asphalt have to exceed 5% from the base price index.
- 650-3(B)** Submit materials to the M&T asphalt design laboratory representative samples of each mix component. These samples should be submitted to the design lab 20 days prior to the anticipated beginning. (This change allows M&T more time to compile the materials and perform a verification test.)
- 650-4** The requirements of retention coating was deleted from Table 650-1 because Dept. does not perform test.
- 650-5** The same seasonal limitations for all final inch asphalt surface mixes was placed on the OGAFc.
The minimum air temperature for Type FC-1 and FC-2 Modified mixes was set at 60 degrees. The MTV should be used when placing PG 76-22.
- 650-6** The article was renamed Quality Management System to reduce confusion that it is a QMS for all asphalt pavements.
- 652-3** The contractor is to submit a mix design and the proposed job mix formula for approval.
- 652-3(B)** Submit materials to the M&T asphalt design laboratory representative samples of each mix component. These samples should be submitted to the design lab 20 days prior to the anticipated beginning. (This change allows M&T more time to compile the materials and perform a verification test.)
- 657** New Section: *Sealing Existing Pavement Cracks and Joints* from Project Special Provision
- 660** Section updated; removed the types of surface treatments that the Department no longer uses; also added a provision for Slurry Seals.
- 661** New section for Ultra Thin bonded wearing course was incorporated from the project special provisions.
- 663** New Section, *Hot-In-Place Recycled Asphalt Concrete* from Project Special Provision
- 665** This section was renamed to be more descriptive.

DIVISION 7 CONCRETE PAVEMENTS AND SHOULDERS

- 700-1** The second paragraph of this section was revised to include ride quality as a characteristic in which the Department accepts concrete paving.
A paragraph was added to require the contractor to submit a Process Control Plan.
- 700-3** This article was revised in its entirety to give better instruction concerning the concrete hauling equipment procedures.
- 700-4** Exercise extreme care to ensure that no free water or ponding is present at the time of concrete placement.
Hauling over the underlying asphalt courses will not be allowed other than necessary local traffic and that developing from the operation of essential construction equipment as may be authorized by the Engineer.
A paragraph was added to require the contractor to use a cable stringline reference to use to control the profile and alignment of the concrete pavement.
- 700-5** The Section number 1412 was revised to 1413 to reflect a numbering change in Division 10.
The air temperature, in which concrete paving is to be stopped, was changed from 40°F to 35°F on the lower end and from 95°F to 90°F on the upper end.
The 6th and 7th paragraphs in section (A) were revised to allow the use of the maturity meter in determining the strength of the concrete in order to allow construction equipment or hauling equipment on the pavement.
The last paragraph in Section (A) was moved from Section (B) for cohesion purposes.
In Section (B), revisions were made to provide cohesion to the section. Also, some sentences were deleted because they were redundant.
- 700-6** The article revised in its entirety to concentrate solely on vibrating concrete. Additional instructions were added concerning the requirement of an electronic vibrator monitoring device.
- 700-8** The article was revised in its entirety to give better instruction on how the Department requires the PCCP to be protected from weather conditions.
- 700-9** In Section (A), a change was made to require the use of a curing period of 7 curing days for pozzolan mix designs.
Section (B) was revised to detail when the curing compound should be applied, when hand spraying shall be permitted, and to instruct the use of an inline flow metering device to ensure the proper application rate. The last paragraph in this section was added to instruct that the pavement be re-sprayed if it were subject to heavy rainfall within 3 hours after the curing compound had been applied.
Section (C) was revised to provide further instruction on curing concrete with the use of polyethylene film.
- 700-11** Section (A) was revised to incorporate the project special provision that requires sawing and sealing of all transverse joints. The sawing shall be done with an early entry dry-cutting sawing system.
- 700-12** Section (A) was revised to incorporate the project special provision that requires the sealing of all joints with rubber asphalt joint sealer instead of a backer rod and low modulus sealant.

Section/Article

	The last sentence was added in section (D) to specify that no overbanding of filler material would be allowed.
700-13	The article was revised to incorporate the project special provision that allows the use of the maturity method for early opening of concrete pavement to construction traffic.
700-15	Section (E) was revised to specify that the flexural strength of concrete will be determined by testing a minimum of one set of two 6" x 6" x 20" beams at 28 calendar days instead of 14 calendar days. The second paragraph in Section (F) was revised to allow the contractor to use either test beams or the maturity method to determine that the concrete has attained a flexural strength of at least 450 psi.
710-1	The article was revised to include performing maturity testing as work covered by this section.
710-4	In the second paragraph, 14 calendar days was changed to 28 calendar days.
710-7	The 6 th paragraph of this article was revised to specify that the concrete pavement surface have a profile index (PI) along any line tested not exceeding 25 inches per mile, as determined with a 0.00 inch blanking band, over any 600 foot section of pavement. Also a sentence was added to instruct the contractor to verify that the corrective measures performed have obtained the smoothness requirements.
710-10	Section (C) was revised to reflect the change of the flexural strength requirement from 600 psi at 14 days to 650 psi at 28 days. In addition, any pavement that fails to attain 600 psi, instead of 550 psi, is subject to removal.
720-1	The article was revised to include furnishing maturity testing equipment as work covered by this section.

DIVISION 8 INCIDENTALS

801-1	Added language concerning stake out of permitted work areas
846	Deleted Modified Concrete Flume.
848	Concrete Wheelchair Ramps pay item changed to each.
848	Incorporated Detectable Warning from Project Special Provision
852	Removed Corrugated Concrete Island
855	Deleted Precast Concrete Noise Barrier.
860	Deleted Temporary Concrete Cover for Catch Basins.
862-3	Revised language concerning rock interfering with post installation.
864	Added Remove and Reset Guiderail
876	Removed Concrete Riprap

DIVISION 9 SIGNING

900-2	Deleted old Subarticle, Applicable Specifications, Standards, and Publications.
901-3(B)	Added storage fee of 5% of the cost of the sign per month or portion thereof.
901-3(D)	Reworded to add verbiage on the application of chromate conversion coating and to remove Cleaning and Etching.
901-3(F)	Removed reference to use AWS certified welders.

Section/Article

901-3(H)(3)	Removed verbiage on demountable button type letters, numerals, symbols, and borders.
901-3(L)	Added new Subarticle on Transparent Films.
901-4(E)	Deleted Subarticle Close up Inspection and replaced with new Silk Screening Inspection Procedures.
902	Changed title to FOUNDATIONS FOR GROUND MOUNTED SIGNS
902-3(C)	Deleted Subarticle Overhead. If needed, it will be used as a project special provision.
903	Changed title to GROUND MOUNTED SIGN SUPPORTS
903-3(A)	Reworded.
903-3(C)	Deleted Subarticle Overhead Sign Supports. If needed, it will be used as a project special provision.
903-3(D)	Added verbiage on island applications and organic non-aerosol zinc repair paint
903-3(F)	Added verbiage.
903-3(G)	Added new Subarticle Steel Square Tube Supports.
904-3(H)	Added new Subarticle Relocation (Ground Mounted) Signs.
905	Deleted. If needed, it will be used as a project special provision.
906	Deleted
908	Deleted.

DIVISION 10 MATERIALS

1000-2	Added Silica fume.
1000-2	Added Calcium nitrite corrosion inhibitor.
1000-3	Changed minimum flexural strength of concrete pavement to 650 psi.
1000-3(A)	Added reference to Form 312U.
1000-3(A)	Deleted text referencing changes to mix proportions.
Table 1000-1	Added several concrete mix types.
1000-5	Deleted Class M specification.
1000-5-1000-11	Renumbered to accommodate flowable fill and latex modified concrete sections.
1000-7	Added specification for flowable fill.
1000-8	Added specification for latex modified concrete.
Table 1005-2	Updated 2s and 2ms gradations.
1006-1	Added verbiage describing sections of the Aggregate QC/QA manual.
1006-2(F)	Added Plant Ownership Update Form requirement.
1008-1(E)	Deleted reference to NCDOT Assurance Sampling at a Stockpile.
Table 1010-1	Deleted reference to aggregate base course types and updated passing #200 gradation requirements and related notes.
1010-2 (A)	Changed price adjustment verbiage.
1010-2 (B)	Deleted reference to Type B aggregate base course.
1010-4(B)	Changed lot size.
1014-2(E)(1)	Added No. 78M aggregate.
1014-2(E)(2)	Deleted Machine Placed Curb, Curb and Gutter and Paved Ditch. Added Latex Modified Concrete specification.
1014-2(E)(6)	Added Sand Lightweight Concrete specification.
1018-2(B)(2)	Deleted reference to overburden from quarries.
1020-2	Changed reference from AASHTO MP-1 to AASHTO M 320.

Section/Article

1020-7	Added requirement to AASHTO T59. Added exceptions for CRS-2P emulsions.
1020-9(C)	Deleted reference to Cut-Back Asphalt.
1024-3(D)(5)	Added reference to Corrosion Inhibitor.
1050-3	Added color and thickness verbiage.
1050-4	Changed requirements for barbed wire.
1050-5	Changed woven wire strength requirement.
1050-6	Added verbiage on color requirement.
1050-8	Prohibits use of aerosol products.
1056	Changed test methods required.
1060-3	Deleted geographic limitations on limestone.
1060-13	Added license requirement for herbicide application.
1070-10	Added Mechanical Butt Splice requirements.
1072-7(B)(2)	Specified requirement of coating nuts with wax lubricant.
1072-9(D)	Specified Charpy V-notch test requirement for diaphragms and crossframes connecting horizontally curved members.
1072-12(E)	Added section for Heat Curving Girders Renumbered to (G) to accommodate Heat Curving Girders.
1074-7(B)	Added requirement to mark castings.
1078-2	Added reference to Epoxy Protective Coating.
1078-3	Added requirement to provide separate internet access in office area.
1078-5	Added requirements for casting holes.
1078-9	Added verbiage concerning box beams and allowance for use of self consolidating concrete
1078-12	Added section on Vertical Cracks in Prestressed Girders Prior To Detensioning.
1078-12-1078-17	Renumbered to accommodate section on Vertical Cracks in Prestressed Girders Prior To Detensioning.
1078-13(E)	Specifies requirements for conduit, and prohibits use of flexible conduit.
1078-14	Changed allowable stress allowance during handling.
1078-15	Added requirements for top surface, void repair, and coating ends of prestressed members.
1078-16(F)	Added section on Box Beams.
1080-4	Added testing requirements.
1080-12	Added SSPC requirements.
1082-1	Added General section.
1082-1-1082-3	Renumbered to accommodate General section.
1082-2(C)	Deleted reference to Sheet Piles
1082-3(F)	Added requirements for poles.
1082-4(G)	Added requirements for poles.
1084	Deleted references to untreated timber piles.
1084-1(B)	Added grade requirements for steel piles.
1084-2(A)	Added requirements for treated timber sheet piles.
1084-2(C)	Added requirements for prestressed concrete sheet piles.
Table 1092-1	Modified references to alloys.
1092-3	Deleted section on Button-Type Demountable Copy.
1092-3-1092-4	Renumbered to accommodate deletion of section.
1092-3	Changed certification to Type 6.
1093-1	Added requirement of encapsulated or enclosed lens.

Section/Article

- 1093-2(A)(2)** Deleted requirement for performance bonding.
- 1093 Tables** Deleted Type II. Modified Type IV, V, VI, VII, VIII, IX requirements. Added Type X requirements.
- 1093-2(E)** Deleted and modified several performance requirements.
- 1094-1(D)** Added Steel Square Tube Posts.
- 1094-1(E)** Added Wood Supports.
- 1096-2** Added requirement for mechanical galvanization of all fasteners.
- 1097-7** Reference is made to 1082 for treatment of poles.
- 1098-1** Revised QPL approval to date of installation, from existing project special provision.
Deleted Plan Quantity Measurements.
Revised plan of record documentation requirements.
Added fiber-optic lashing wire requirement to Wire & Cable, from existing project special provision.
Moved Electrical Service from other section.
- Old 1098-2** Deleted Signal Heads
- 1098-4** New subarticle, from project special provision and other sections.
- 1098-5** Revised general requirements.
Deleted oversized junction boxes.
Revised requirements for standard and oversize heavy-duty junction boxes.
- 1098-7** Added option to use double-strand eyes, from existing project special provision.
- 1098-9** Revised loop lead-in cable, from existing project special provision.
Added requirement to provide length markings.
- Old 1098-10** Deleted Loop Emulator
- 1098-12** Added Self-Healing Ring Transceivers, from existing project special provision.
- Old 1098-15** Deleted Metal Poles
- Old 1098-16** Deleted Mast Arms
- 1098-14** Revised anchor bolt length. Deleted tapered shafts.
- 1098-15** New subarticle from other section.
- 1098-16** Added Cabinet Base Adapter/Extender, from existing project special provision.
- 1098-17** Added Beacon Controller Assemblies, from existing project special provision.
- Old 1098-18-22** Deleted Cabinets and Controllers
- Old 1098-23** Deleted Closed Loop System

DIVISION 11 WORK ZONE TRAFFIC CONTROL

- 1101-5(D)** Deleted
- 1101-35** Deleted Maintenance of the Travelway
- 1101-8** Redefined parking of personal vehicles on DOT right of way
- 1105-4** Renamed Maintenance and Inspection. Major rewording of this article.
- 1105-6** Deleted Construction Zone Traffic Control Device Surveillance
- 1110-3(C)** Major rewording
- 1120-5** Added NEW pay item: Changeable Message Sign (Short Term). This pay item is paid per day for Short Term CMS used on a project for a specific work operation, removed from the project after the specific work operation is completed, and remains on the project NO MORE than 1 month.
- 1125** Deleted Warning Flag Sets. If needed, it will be used as a special provision.

- 1145** Deleted Type II Barricades. Only allow Type III Barricades.
- 1150-4** All Flaggers, including ones used on -Y- lines, will be paid for if they are used in conjunction with a lane closure. All other flaggers (i.e. for entrance to borrow pit, for trucks crossing a road, etc.) will be incidental.
- 1155** Deleted Warning Lights. Will be used as a special provision if necessary.
- 1165** TMIA's used in Moving and Mobile operations will be incidental to the work being performed. No payment will be made for TMIA's used in Moving and Mobile operations.
- 1175** Deleted Temporary Shoring for the Maintenance of Traffic, will be a special provision if needed.
- 1180** Skinny Drums, New section

DIVISION 12 PAVEMENT MARKINGS, MARKERS AND DELINEATION

- 1205** Rearranged the section to include separate Articles for Paint, Thermoplastic, Polyurea, Epoxy, Cold Applied Plastic, and Heated In Place Thermoplastic. Added the special provision for Polyurea Pavement Markings to this section. Added 4 categories under Cold Applied Plastic with minimum retroreflective values for each:
- Category 1: Permanent Standard Tape
 - Category 2: Permanent High Performance Tape
 - Category 3: Permanent Wet Reflective High Performance Tape
 - Category 4: Removable Tape
- Added minimum retroreflective readings for polyurea markings that have been snowplowed during the 180-day observation period.
- 1251** Raised Pavement Markers, combined Temporary and Permanent Raised Markers and changed the title.
- 1252** Deleted Permanent Raised Pavement Markers. Permanent Raised Markers have been included in Section 1251 – Raised Pavement Markers.
- 1265** Deleted Drum Type Delineators. This item is not used anymore.

DIVISION 14 LIGHTING

- 1400-2(B)** Included High Density Polyethylene (HDPE) conduit.
- 1400-4(I)** Replaced grout at base of High Mount Standards with galvanized hardware cloth.
- 1401** Added requirements for design based on Fatigue Calculations, with Magnetic Particle Testing (MPT) for base to upright welds.
- 1402-3** Updated foundation design based on 2001 AASHTO requirements and new Standard Drawing.
- 1403-2** Added requirement for Cutoff optics and glare shields.
- 1406-2** Added requirement for third party certification of photometric data upon request.
- 1408-2** Added requirement for load-side multi-tap box lugs or distribution blocks for service breaker. Added requirement for mounting brackets or screw studs for mounting components. Added requirement for labeling per NEC.
- 1409-2** Included High Density Polyethylene (HDPE) duct. Added clear zone requirements for bore pits.
- 1410-2** Included High Density Polyethylene (HDPE) conduit.

1413-5 Added minimum and maximum spacing for tower lights.

DIVISION 15 UTILITY CONSTRUCTION

Changed name from Utilities to UTILITY CONSTRUCTION

- 1500-1** Condensed wording
- 1500-2** Added verbiage about agreements with utility owner and communications.
- 1500-3** Added paragraph about final connections.
- 1500-4** Removed paragraph about adjusting other utilities since this is covered in Div. 1.
- 1500-5** Corrected language by removing sanitary.
- 1500-6** Reworded for clarity.
- 1500-7** New Article incorporating requirements from other sections into this section and requiring As-Built plans.
- 1500-8** New Article incorporating requirements from other sections into this section.
- 1500-9** New Article incorporating requirements from other sections into this section.
- 1500-10** Changed name and condensed language.
- 1505** Added Pipe Laying to title.
Changed pay items.
- 1505-1** Condensed wording
- 1505-2** Specified class of select material.
- 1505-3** Reworded.
 - (A)** Added Sub-Article
 - (B)** Added Sub-Article
 - (C)** Added Sub-Article
 - (D)** Added Sub-Article
 - (E)** Added Sub-Article
 - (F)** Added Sub-Article
- 1505-4** Reworded.
- 1505-5** Minor word changes
- 1505-6** Added pipe laying, bedding, and thrust restraint as incidental.
 - (A)** Reworded.
 - (B)** Added to bedding material as incidental.
 - (C)** Minor wording change.
 - (D)** Minor wording change.
 - (E)** Minor wording change.Eliminated 3 pay items. Foundation conditioning material, Select Backfill, and Pavement Repair will no longer be separated under a Utilities category. Use pay items elsewhere in *Standard Specifications*.
- 1510** Title change.
Extensive changes to overall document. Moved utility controls to Section 1515. Moved some requirements to Section 1500. Reduced pay item to only water pipe without separate payment for various types, fittings, or appurtenances. Eliminated payment for service lines.
- 1510-1** Condensed wording.
- 1510-2** Added Contractor selection to piping material type.
Added provisions for locator wires and marking tape.
Moved submittal requirements to Section 1500.

Section/Article

1510-3	Extensively reworded and updated.
1510-3(A)	Testing and Sterilization Reworded and updated. Added pigging requirement. Testing, cleaning and sterilization may be performed concurrently or consecutively. Dispose of waste water in accordance with all environmental regulations.
1510-4	Condensed Measurement and Payment to one Article. Eliminated or moved pay items to other Sections.
1515	New Section. Pay items for valves, hydrants, meters, etc.
1520	Title change. Extensive changes to overall document. Moved utility controls to Section 1515. Moved some requirements to Section 1500. Reduced pay item to only sewer pipe without separate payment for various types, fittings, or appurtenances. Eliminated payment for service lines.
1520-1	Condensed wording.
1520-2	Added Contractor selection to piping material type. Added provisions for locator wires and marking tape. Moved submittal requirements to Section 1500.
1520-3	Extensively reworded and updated. Required conformance with DENR requirements. Added pumping requirements. Added deflection testing and lamping test.
1520-4	Condensed Measurement and Payment to one Article. Eliminated or moved pay items to other Sections.
1525	Title Change. Included water manholes under generic title Utility Manhole and condensed pay items. Reworded and condensed.
1525-2	Added more detail.
1525-3	Added manhole top height requirements and adjustment requirements. Added vacuum test.
1525-4	Eliminated drop assemblies.
1530	Title Change. Renamed pay items and included items from other sections.
1530-1	Reworded and condensed.
1530-2	Condensed.
1530-3	Apply all the requirements in Section 1505 for excavation, trenching, pipe laying, and backfill.
1530-3(A)	Abandoning Pipe: Reworded and added additional criteria.
1530-4	Renamed pay items, added pay items from other sections.
1540	Expanded criteria and renamed pay items.
1540-1	Condensed.
1540-2	Added more materials.
1540-3	Moved trenchless to Section 1550. Added fill requirement to large casings.

Section/Article

1540-4	Renamed pay item.
1550	New Section Pay items as additional compensation for trenchless construction.

DIVISION 16 EROSION CONTROL AND ROADSIDE DEVELOPMENT

1635-3(A) and (B)	Rewrite
1636	Deleted
1638	Stilling Basins Rewrite
1663	Deleted Sprigging
1675	Deleted Response for Erosion Control (revised and made Project Special Provision.)

DIVISION 17 – SIGNALS AND INTELLIGENT TRANSPORTATION SYSTEMS

1700-3	Clarified who is responsible for utility charges. Added liquidated damage, from existing project special provision. Added new subarticles: Inspections and Traffic Signal Activation. Added option to splice wires in condulets. Moved Grounding from other section. Added new subarticles Electrical Bonding and Temporary Traffic Signal Installation, from existing project special provisions.
1705-1	Deleted incandescent sections.
1705-2	Revised to refer to project special provisions.
1705-3	Clarified bagging signal heads, splicing. Deleted requirement for maximum of 6 heads on one neutral conductor. Removed reference to MUTCD for height of pedestrian heads.
1705-4	Revised signal cable pay item to actual linear feet.
1710-3	Clarified bonding requirements. Revise to 27' over railroad tracks, from existing project special provision.
1710-4	Revised pay item to actual linear feet.
1715	Expanded section to include Directional Drill and Plowing, from existing project special provision
1715-4	Revised pay items to pay for size and quantities of conduit for Trenching and Bore and Jack.
1716-3	Removed requirement to install junction boxes every 250 feet.
1720-2	Revised to refer to 1082 for materials. Clarified grounding requirements.
1721-3	Clarified guy assemblies required for type of cable installed. Changed strand vise to three-bolt clamp.
1722-3	Added requirement for condulet for lead-in cable, from existing project special provision.
1722-4	Added pay item for Heat Shrink Tubing Retrofit Kit.
1725-3	Added requirement that all work must be performed in the presence of the engineer, from existing project special provision. Added requirement to submit Inductive Detection Loop & Grounding Tests Results form.

Section/Article

1726-3	Removed type 1 and type 2 lead-in cable, from existing project special provision.
	Revised loop system resistance, from existing project special provision.
1726-4	Revised pay item to actual linear feet, either 18-2 pair or 18-4 pair lead-in cable.
1727	Deleted Video Loop Emulator Detection
1731-2	Revised to require material to be on QPL.
1732-4	Revised testing requirements.
1732-2	Revised to require material to be on QPL.
1732-4	Added pay item for Fiber-Optic Self-Healing Ring Transceiver.
1734	Added Remove Existing Communication Cable, from existing project special provision.
1735	Added Cable Transfers, from existing project special provision.
1740	Deleted Metal Strain Poles
1741	Deleted Mast Arms with Metal Poles
1742	Deleted Metal Pole Foundations
1743-2	Clarified that concrete requirement is Class B.
1743-3	Revised to no longer caulk foundations and base plate, from existing project special provision.
	Removed requirements to submit shop drawings.
1743	Deleted Structure Design of Signal Supports
1750-1	Revised Selection of foundation type revised to by the Engineer.
1751-2	To refer to contract
1752	Deleted Closed Loop System Master Controller
1753	Added Cabinet Base Adapter/Extender, from existing project special provision.
1755	Added Beacon Controller Assemblies

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